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beyond the upper side of the housing (1).

B13

18. (Twice Amended). The locking device according to Claim 1, wherein the pivot axis (11), in the closing position, has been moved beyond a straight line extending through the point of rest of the hooked end (15) on the closing edge (4) and through the guide element (9) to cause a self-locking action.

REMARKS

Reconsideration of the subject application in view of the present amendment is respectfully requested.

By the present amendment, the specification has been amended to provide appropriate headings, provide a uniform language therein, and to describe an added drawing figure in the section "Brief Description of the Drawings." The amendment has been effected by replacing respective paragraphs of the specification of the respective pages, as required by Rule 121, are enclosed).

The drawings have been amended to add an additional drawing figure.

Claim 8 has been cancelled, and Claims 3, 6, 9, 10, 12 and 13 have been amended to correct formal errors therein and/or to eliminate an alleged indefiniteness therein.

Based on the foregoing amendments and the following remarks, the application is deemed to be in condition for allowance, and action to that end is respectfully requested.

I. Objection to the Drawings

The Examiner objected to the drawings under 37 C.F.R. §1.83 (a) for not showing every feature specified in the claims, namely, a circuitry (Claim 8), several catch hooks (Claim 19), seal (Claim 17).

As noted above, Claim 8 has been cancelled. A new drawing figure (Figure 4), which is being submitted herewith, shows several hooks (12) and seals (1'). Approval of the added Fig. 4 is respectfully requested (copy, together with letter to the Official draftsman) being enclosed).

In view of the above, it is respectfully requested that the objection to the drawings be withdrawn.

II. Objection and Rejection of Claims

The Examiner objected to the specification for absence of the necessary headings and for non-consistent terminology therein. As noted above, the specification has been amended to provide a consistent language therein.

III. Objection and Rejection of Claims

IIIa. Objection to the Claims

The Examiner objected to Claims 6, 9, 10, 12, 13 and 18 for formal errors therein. As noted above, Claims 6, 9, 10, 12, 13 and 18 have been amended to correct formal errors therein.

IIIb. Rejection of Claims under 35 U.S.C. §112

The Examiner objected to Claims 3 and 8 under 35 U.S.C. §112, second paragraph, for allegedly being indefinite. Claim 3 has been amended to eliminate the alleged indefiniteness therein. Claim 8 has been cancelled.

IIIc. Rejection of Claims over the Prior Art

The Examiner rejected Claims 1-3, 5, 6, 8, 8 11-13, 15, 16, 18 and 19 under 35 U.S.C. §103(a) as being unpatentable over Shimizu, U.S. Patent No. 6,402,208 (Shimizu). Claims 4, 7, 10, 14 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shimizu in view of, respectively, Baukholt, et al., U.S. Patent No. 5,992,194 (Baukholt), Swartzell, U.S. Patent No. 6,315,336 (Swartzell), Daugherty, et al., U.S. Patent 4,776,619 (Daugherty), and Finkelstein, et al., U.S. Patent No. 5,887,916 (Finkelstein)..

It is respectfully submitted that Claims 1-7 and 9-19 are patentable over the cited references.

Specifically, Claim 1 recites:

- (i) at least one catch hook (12) supported on the swiveling lever (8) at a spacing from the axis of rotation (7) on a pivot axis (11) which, at a radial spacing from the pivot axis (11), has a cam segment (14) concentric thereto, unto which the guide element (9) of the swiveling lever (8) engages, and
- (ii) at least one spring means (17) biasing the catch hook (12) in the closing direction until the guide element (9) bears against a first final stop (14') of the cam segment (14)

The foregoing novel features of the present invention are not disclosed in Shimizu. In Shimizu:

Bracket member 13 includes a lower wall 15 which is connected to platform 8 via rivet 12 so that the bracket member 13 can pivot above the pivot axis P-P of the rivet 12 (column 2, lines 26 to 31).

The latch arm 18 includes an elongated aperture 19 through which the rivet 12 extends. Thus, the latch arm 18 can move along the elongated aperture 19 with respect to the rivet 12 and can pivot about the rivet 12 (compare column 2, lines 44-47).

The catch hook 22 is not supported on bracket 13 at a spacing from the axis of rotation 12 but directly on the axis P-P.

To the upper wall 14 of bracket member 13 a handle 17 is fixed (compare column 2, lines 34 to 35).

According to the specification the spring 31 is provided for biasing the bracket member 13 alternatively towards the latching or unlatching position. Therefore, one end of the spring 31 is connected to an anchor 32 formed in the support plate 6 and the other end is connected to an anchor 33 formed in the intermediate ball 16 (compare column 3, lines 15 to 20).

Moreover, according to the specification latch arm 18 provided with catch hook 22 is positively engaged by the upward projection 24 within arcuate slot 26 formed in the lower wall 15 of the bracket member 13 and by a downward projection 25 within slot 27 of the support plate 6. When the bracket member 13 is pivoted about the rivet 12, the slots 26 and 27 guide and move the corresponding projection 24 and 25 and thereby positively move latch arm 18 in the unlatching position and the latching position (compare column 2, line 50 to line 65 and column 4, line 27 to line 43). The positive guide of latch arm 18 is relatively complex.

According to the above structure, movement of handle 17 in a direction A respectively B positively moves catch hook 22 in the locking respectively unlocking position. There is no elastic element between "drive" 17 and catch hook 22. The positive movement of the catch hook 22 in the

latching position can lead to damage of the hook respectively of the abutment thereof in the closure member. An electric drive could also be severely damaged.

Contrary to this, the catch hook 12 of the inventive locking device is supported on the swiveling lever 8 at a spacing from the axis of rotation 7 on a pivot axis. Additionally, the catch hook 12 is provided with a cam segment 14 concentric to the pivot axis into which projecting guide element 9 of swiveling lever 8 engages.

Moreover, spring means 17 biases catch hook 12 in the closing (and not in the opening) direction until the guide element 9 bears against a first final stop 14' of the cam segment 14.

When swiveling lever 8 is pivoted in the closing direction, the spring means 17 holds a catch hook 12 with a first final stop 14' on the guide element 9 in order to pivot the catch hook with a swiveling lever 8 in the closing direction until catch hook 12 impinges on the closing edge 4 of the closure 2.

After impingement, swiveling lever 8 continues to be pivoted enclosing direction but guide element 9 will move within cam segment 14 to the second final stop 14" thereof. Consequently, catch hook 12 is moved in closing direction and pulls closure into the closing position.

This movement is effected without a complex guide of a latch arm by an elongated aperture 19 and a double structure of projections 24 and 25 and slots 26 and 27 as disclosed by Shimizu. Additionally, the spring means is an elastic element which may prevent damage from the locking device respectively the drive when the hook comes near the closing position.

A rejection based on 35 U.S.C. §102 as in the present case, requires that the cited reference disclose each and every element covered by the Claim. Electro Medical Systems S.A. v. Cooper Life Sciences., 32 U.S.P.Q. 2d 1017, 1019 (Fed. Cir. 1994); Lewmar Marine Inc. v. Barient Inc., 3 U.S.P.Q. 2d 1766, 1767-68 (Fed. Cir. 1987); Verdegaal Bros., Inc. v. Union Oil Co., 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). The Federal Circuit has mandated that 35 U.S.C. §102 requires no less than “complete anticipation . . . [a]nticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim.” Connell v. Sears, Roebuck & Co., 220 U.S.P.Q. 193 (Fed. Cir. 1983); See also, Electro Medical Systems, 32 U.S.P.Q. 2d at 1019; Verdegaal Bros., 2 U.S.P.Q. 2d at 1053.

Since Shimizu fails to disclose each and every feature of independent Claim 1, Shimizu, as a matter of law, does not anticipate the present invention, as defined by said independent claim.

In view of the above, it is respectfully submitted that Shimizu does not anticipate or make obvious the present invention as defined in Claim 1, and the present invention is patentable over Shimizu.

The secondary references also do not disclose or suggest the novel feature of the present invention, as defined by Claim 1.

Claims 2-7 and 9-19 depend on Claim 1 and are allowable for the same reasons Claim 1 is allowable and further because of specific features recited therein which, when taken along and/or in combination with features recited in Claim 1 are not disclosed or suggested in the prior art.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance, and allowance of the application is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's

amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Respectfully Submitted,

Alexander Zinchuk

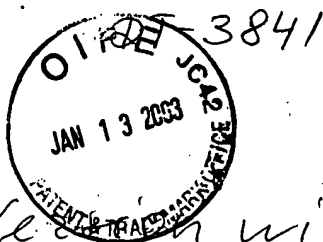
/s/ Alexander Zinchuk /s/
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for David Toren
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail and addressed to: Commissioner for Patents, Washington, DC 20231 on January 8, 2003.

Alexander Zinchuk



U.S. Serial No. 09/814,229

Version with Markings Showing Changes Made

The catch lever is adapted to be moved through a slot-shaped aperture in the upper side of the housing, which enables the catch lever to be displaced perpendicular to the upper side of the housing and parallel thereto. Basically, the locking device may be disposed so that the catch lever always projects approximately beyond the upper side of the housing. Particularly advantageous, however, is an accommodation in which the catch lever, in an opening position, does not project beyond the upper side of the housing.

Basically, the closing edge may also be accommodated on a projecting element of the closure. According to a particularly advantageous further aspect, however, the closing edge is in a region thereof which stands back with respect to the underside of the closure.

Basically, the locking device is suited for closures which are led to the housing in any motion desired. Particularly advantageous, however, is the locking device of a closure pivotally supported on the housing. It is preferred that the locking device be mounted at a spacing from the ~~swivel bearing~~ ^{pivot axis} of the closure. In any case, one or more locking devices may exist for the closure. A single locking device may be sufficient, however, particularly in a pivotally supported closure.

According to another aspect of the invention, in a pivotally supported closure, however, the catch hook may impinge its hooked end on the closing edge in a pivoted position of the closure which is merely a few angular degrees. Then, the closure may only be pivoted so as to close approximately in order to create the prerequisite for a locking device. If the closure continues to be pivoted so as to close more this causes no harm because it will then also be ensured that the catch hook impinges on the closing edge, thus initiating the pull of the lid into the closing position.

According to an advantageous further aspect, the closure is pulled by the catch hook against a seal between the closure and the housing.



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plane extending through the slot 5 where it particularly may bring its hooked end 15 in engagement with the slot 5 or may grip through the slot 5.

On the left-hand side in the drawing, the catch hook 12 has a bearing eyelet 16 on which a helical spring 17 is supported. The other end of the helical spring 17 is held on a bearing point 18 of the frame structure 6 fixed to the housing. The arrangement of the spring element 17 is such that it will be above the ~~swivel bearing~~ ^{PIVOT AXIS} 11 in any position of the locking mechanism so that it always seeks to pull the catch hook 12; in a counter-clockwise sense, into a position in which the guide pin 9 strikes against the first final stop 14', the right-hand one in the drawing, of the guide cam 14.

Finally, the locking mechanism has an electric driving motor 19 which also is firmly supported on the housing and has a rotary driving gear 20 whose series of teeth meshes with the series of teeth 10 of the swiveling lever 8.

The locking device operates as follows:

In the opening position shown in Fig. 1, the driving motor 19 has pivoted the swiveling lever 8 clockwise about the axis of rotation 7 until a final position is reached in which the gear 20 approximately has reached the one end of the series of teeth 10. In this position, the biased helical spring 17 pulls the catch hook 12 counter-clockwise so that the guide pin 9 abuts against the first final stop 14 of the cam segment 14'.

To close the lid 2, this one first is manually pivoted to the housing 1 until it gets into an angular position of about 5° with respect to the housing 1, which is shown in Fig. 1.

To lock the lid 2, the driving motor 19 drives the swiveling lever 8 about the axis of rotation 7 in a counter-clockwise direction. The helical spring 17 causes the catch hook 12 to continue abutting its first final stop 14' against the guide pin 9. Consequently, the catch hook 12 is pivoted along about the axis of rotation 7 with its hooked end 15 exiting from the upper side of the slot 5. The catch hook 12 is

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pivoted along until its hooked end 15 impinges on the closing edge 4 of the lid 2 as is shown in Fig. 2.

As soon as the catch hook 12 impinges on the closing edge 4 this one becomes the new fulcrum of the catch hook 12. If the swiveling lever 8 continues to be pivoted counter-clockwise, the catch hook 12 consequently is pulled downwardly on the pivot axis 11 and the guide pin 9 in the cam segment 14 is moved towards the second final stop 14" which is the left-hand one in the drawing. The downward motion of the catch hook 12 causes the lid 2 to be *sealingly seals 1' at the* pulled against the upper side of the housing 1 over the closing edge 4 and, hence, to be closed. The closing motion ends when the gear 20 approximately has arrived, in a clockwise sense, at the outermost end of the series of teeth 10. Then, the *pivot axis* ~~swivel bearing~~ 11 has been pivoted by the closing edge 4 and the guide pin 9 beyond the prolongation of a straight line, which results in a self-locking effect. At this point, the guide pin 9 preferably bears against the second final stop 14" of the cam segment 14. Basically, however, it is also possible that the guide pin 9, in a closing position, does not reach the second final stop 14". ✓

Another contribution to a self-locking action is achieved by means of the driving transmission. Further, the electric driving motor 19 is shortcircuited with a view to securing the catch lever 12 in the closing position of Fig. 3.

To unlock the lid 2, the driving motor 19 is operated in a reverse sense so that the course of operations described above is performed in an inverse direction.



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2. The locking device according to claim 1 wherein the swiveling lever (8) substantially is of a circle segment shape.

(Amended)

3. The locking device according to claim 2 wherein the axis of rotation (7) is disposed in the inner angular range of the circle segment shaped swiveling lever (8) and [or] wherein the pivot axis (11) is disposed in the vicinity of a lateral limitation of the circle segment shaped swiveling lever (8).

4. The locking device according to any one of claims 1 to 3 wherein the swiveling lever, on a marginal area extending around the axis of rotation in a circle arc shape, has a series of teeth (10) which interacts with a series of teeth (20) of the drive (19) in order to pivot the swiveling lever (8) about the axis of rotation (7).

5. The locking device according to any one of claims 1 to 4 wherein the guide element is a guide pin (9).

6. The locking device according to any one of claims 1 to 5 wherein the guide element (9) is defined by a prolongation of the axis of rotation (7) for supporting the swiveling lever (8).

7. The locking device according to any one of claims 1 to 6 wherein the drive (19) is by an electric motor.

8. The locking device according to any one of claims 1 to 7 wherein a circuit exists which enhances the self-locking action by shortcircuiting the electric motor drive (19) in the locking position.



4. (Amended). The locking device according to Claim 1, wherein the swiveling lever, on a marginal area extending around the axis of rotation in a circle arc shape, has a series of teeth (10) which interacts with a series of teeth (20) of the drive (19) in order to pivot the swiveling lever (8) about the axis of rotation (7).

5. (Amended). The locking device according to Claim 1, wherein the guide element is a guide pin (9).

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6. *Twice* (Amended). The locking device according to Claim 1, wherein the guide element is a guide pin (9) *is* defined by a prolongation of the axis of rotation (7) for supporting the swiveling lever (8).

7. (Amended). The locking device according to Claim 1, wherein the drive (19) is by an electric motor.

8. (Amended). The locking device according to Claim 1, wherein a circuit exists which enhances the self-locking action by short circuiting the electric motor drive (19) in the locking position.

9. *Twice* (Amended). The locking device according to Claim 1, wherein the catch lever (12) *has* a widened base (13) in which the pivot axis (11) is supported and which, between the pivot axis and an adjoining neck with the hooked end (15), includes the cam segment (14).



10. ^{Twice} (Amended). The locking device according to Claim 1, wherein the catch lever (12) has a fixing point (16) for the spring element (17) on the neck between the cam segment [914]⁽¹⁴⁾ and the hooked end (15).

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11. (Amended). The locking device according to Claim 1, wherein the spring element (17) is held on the housing (1) at the other end.

12. ^{Twice} (Amended). The locking device according to Claim 1, wherein the catch hook (12) is adapted to be moved through a slot-shaped aperture (5) in the upper side of the housing (1) which enables the catch hook [912]⁽¹²⁾ to be displaced perpendicular to the upper side of the housing (1) and parallel thereto.

13. ^{Twice} (Amended). The locking device according to Claim 1, wherein the catch hook (12), in the aperture position, does not substantially project beyond the upper side of the housing (1).

14. (Amended). The locking device according to Claim 1, wherein the closing edge (4) is formed in a region thereof which stands back with respect to the underside of the closure with a cavity existing thereabove.

15. (Amended). The locking device according to Claim 1, wherein the closure (2) is pivotally supported on the housing (1).

17. (Amended). The locking device according to Claim 1, wherein the



closure (2) is adapted to be sealingly pulled back by the catch hook (12) against a seal of the housing (1).

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18. ^{Twice} (Amended). The locking device according to Claim 1, wherein the pivot axis (11), in the closing position, has been moved beyond a straight line extending through the point of rest of the hooked end (15) on the closing edge (4) and through the guide element (9) to cause a self-locking action.

19. (Amended). The locking device according to Claim 1, which has several catch hooks (12).

REMARKS

By the present Preliminary Amendment, Claims 4-15 and 17 to 19 have been amended to eliminate multiple dependency therein. A hand-marked copy of the amended claims, as required by Rule 121, is enclosed.

An early action on merits is respectfully requested.

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Dated: March 21, 2001.
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